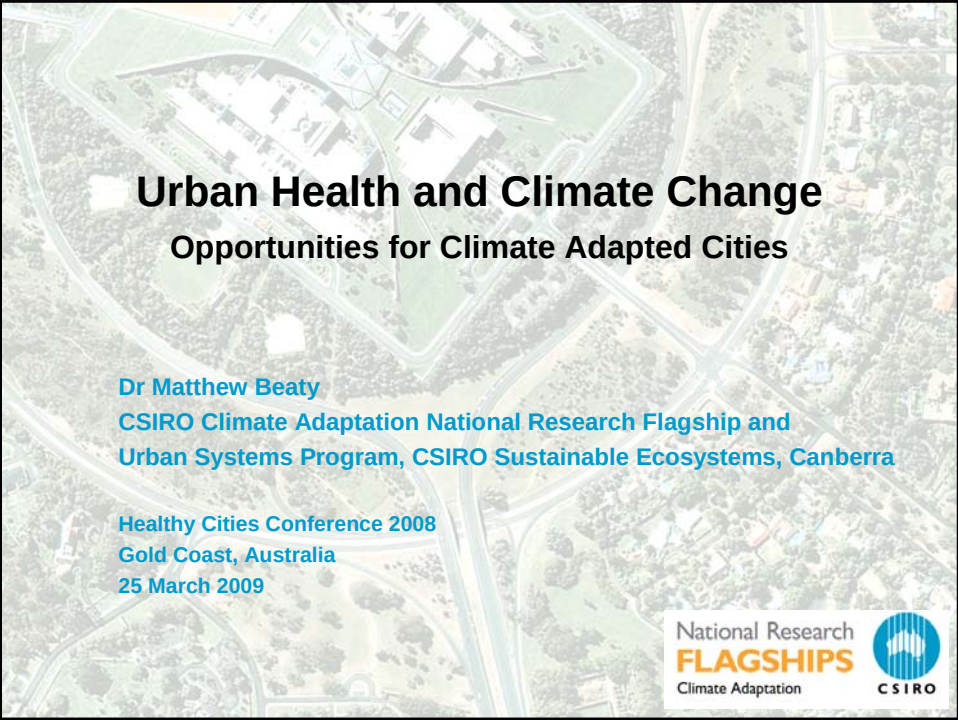




Urban Health and Climate Change

Opportunities for Climate Adapted Cities

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Healthy Cities Conference 2008
Gold Coast, Australia
25 March 2009



Topics to cover

The major issues

- Global urbanisation
- Global climate change

Human-environment interactions in cities

- Some challenges of integrative urban science

Urban health and climate change

- Urban social-ecological systems
- Human health and well-being
- Understanding vulnerability and adaptation

Opportunities

- Linking theory and practice
- Identifying intervention strategies

Global urbanisation

Over half of world population is urban (since 2008)

Urban population increase of 1.2 M per week

Current urban population of 3.3 B will rise to almost 5.0 B by 2030

All future population growth will be urban

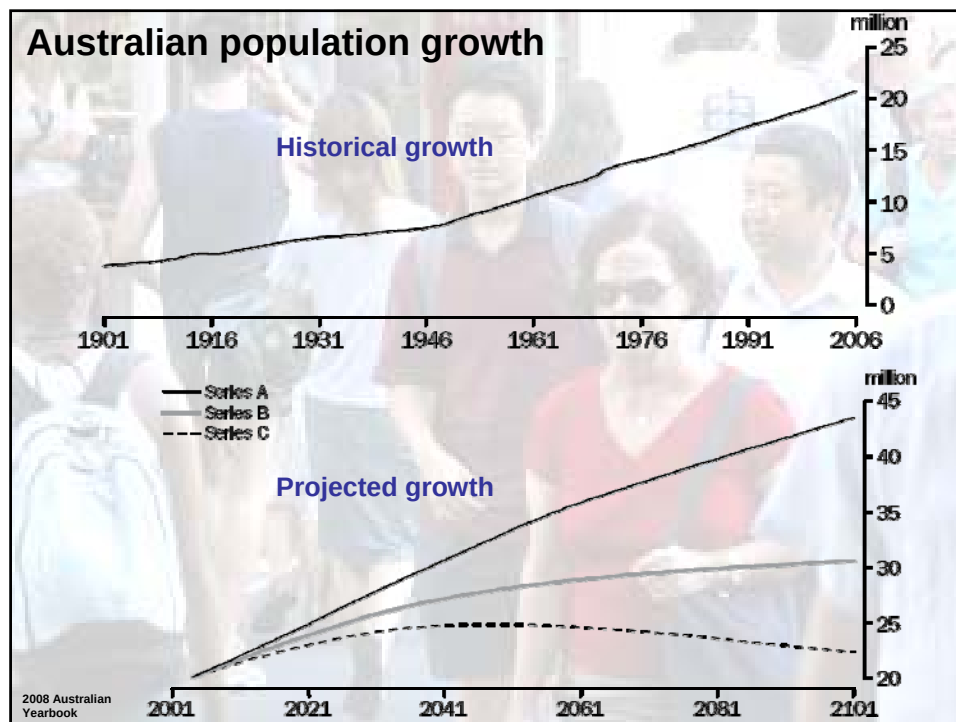
Most will occur in developing countries

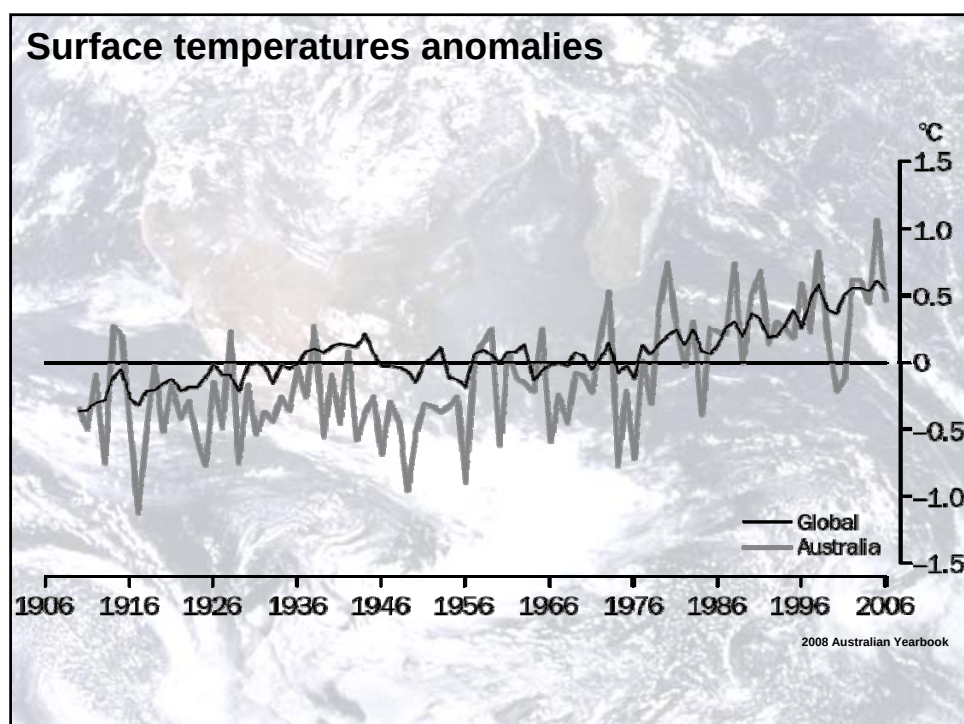
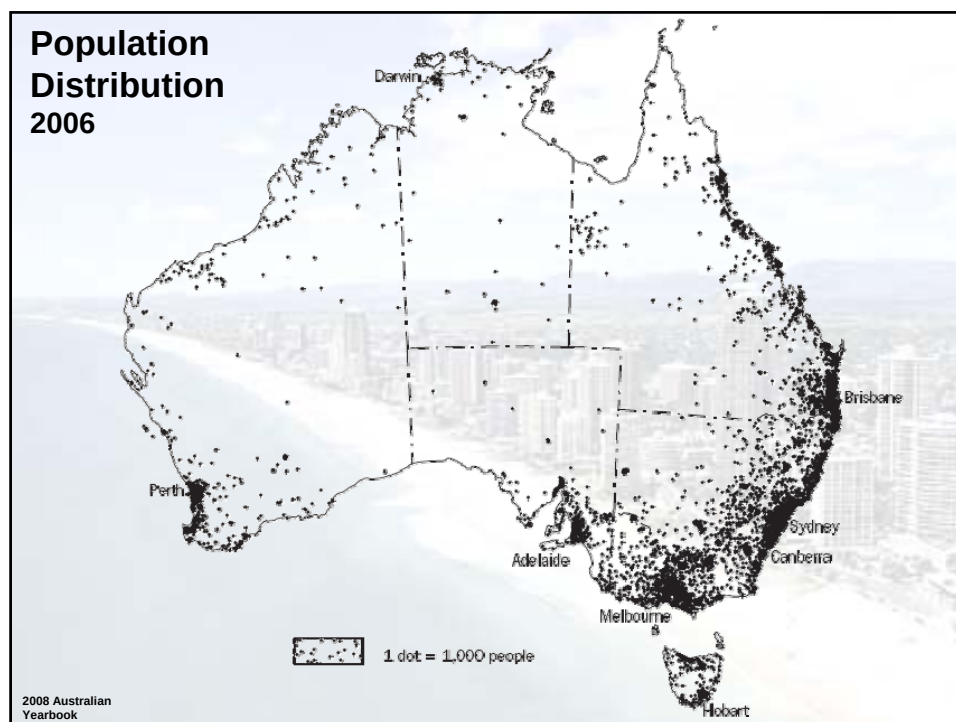
Many different urban growth patterns with varying social and environmental impacts

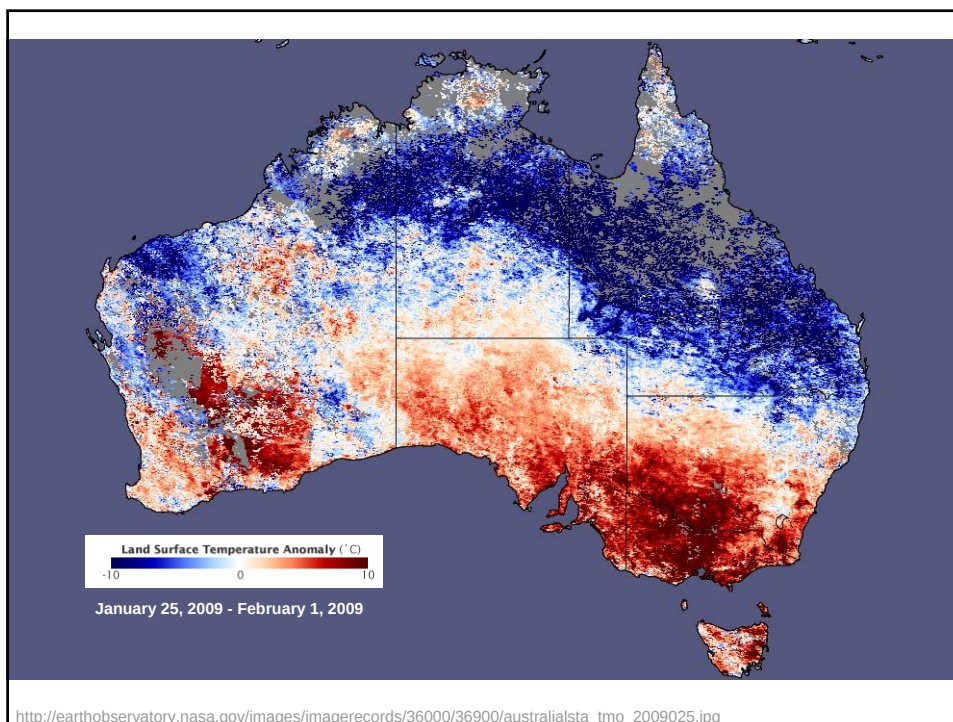
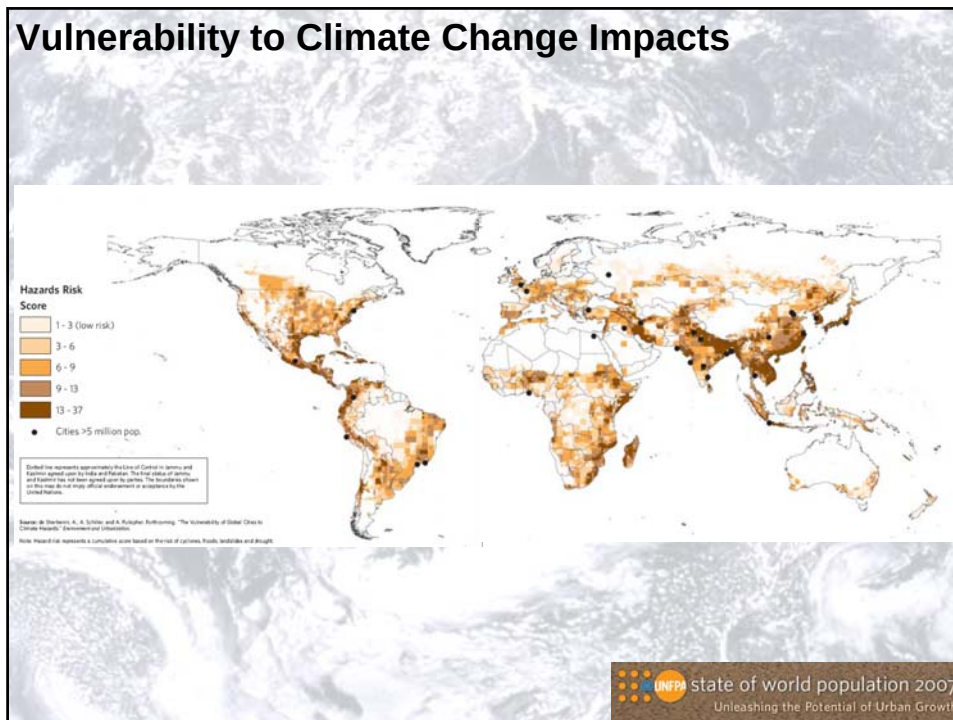
Bottom line: Unprecedented urban growth is imminent

Will it be good or bad? Depends on how we respond now

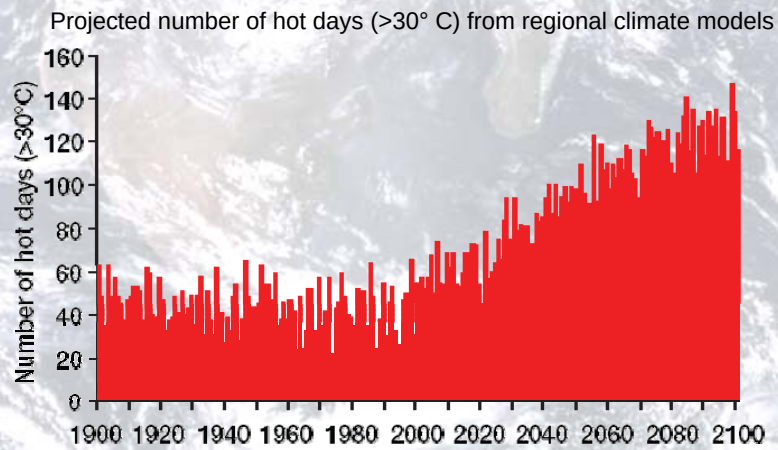
UNFPA 2007







Weather and Climate Change



Urbanisation and climate change adaptation

Urbanisation and climate change are the biggest challenges we face with regard to social, environmental, and economic sustainability

Many climate trends are “locked in” and cannot be mitigated

Urbanisation is similar, but we do have opportunities for shaping future city (re)building

There will be significant variation in how urbanisation and climate change impact different human populations

- Different vulnerabilities and capacities to cope with change

Understanding relationships between urbanisation and climate change is critical for developing interventions and adaptation strategies

Urbanisation and climate change adaptation

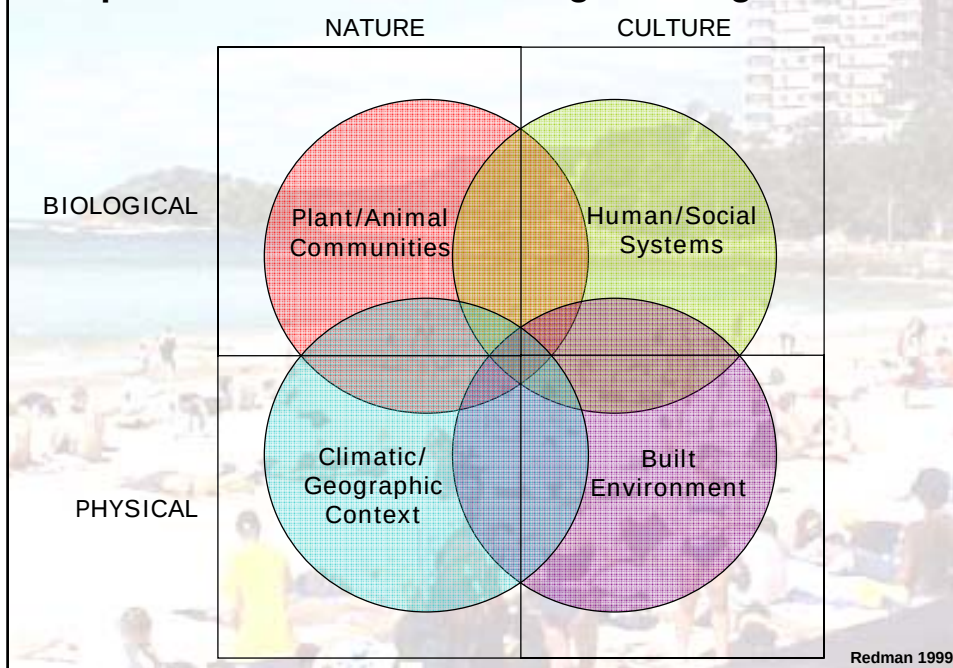
Identifying urban areas that are well prepared and poorly prepared to cope with a changing climate

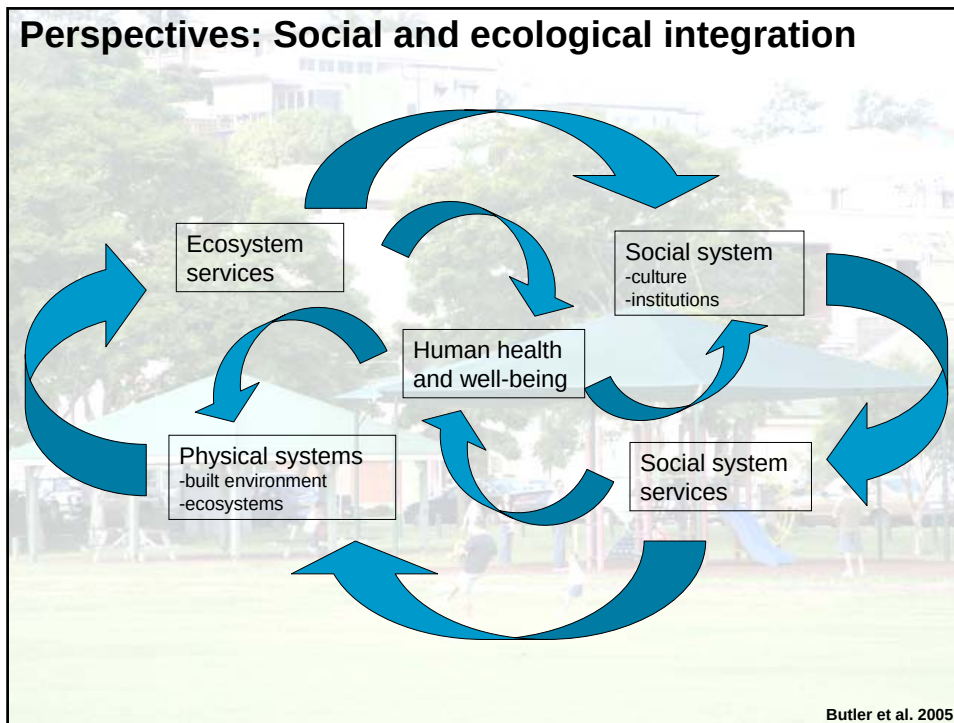
What are the impacts, vulnerabilities, and opportunities for early adaptation in urban and suburban areas?

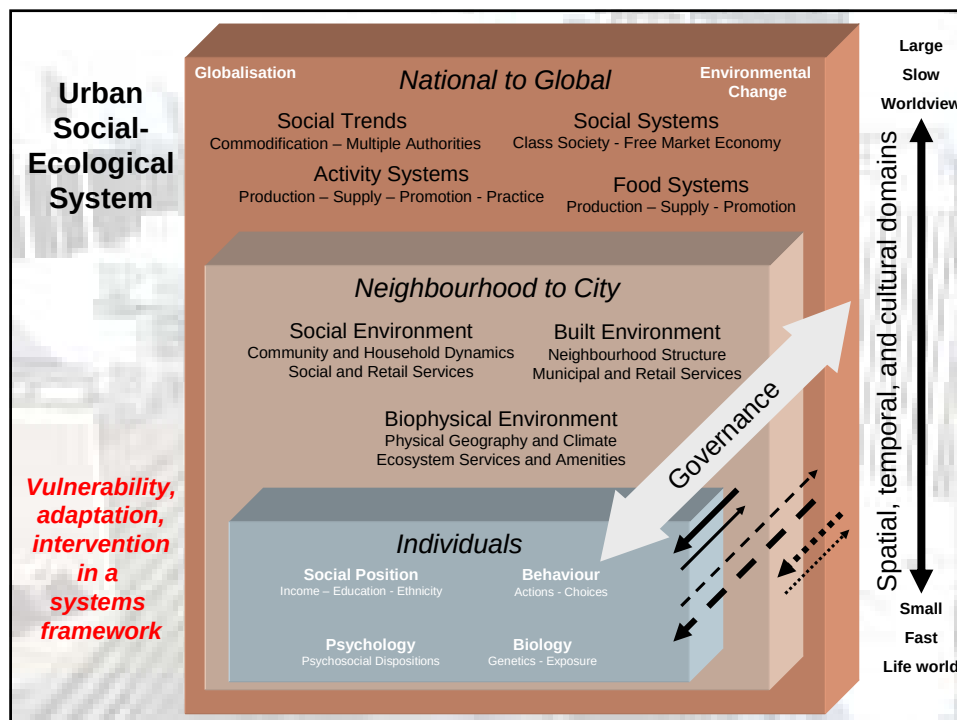
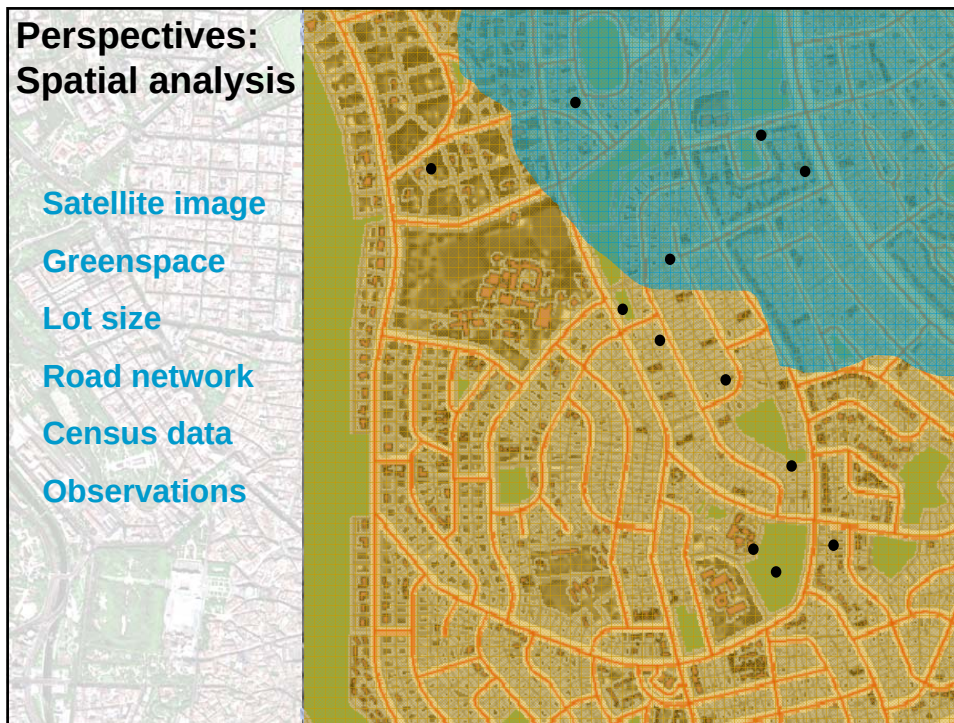
Identify options for early adaptation related to new development patterns, retrofitting existing urban areas, and/or identifying behavioural changes necessary for communities to cope

These objectives are approached through comparative and spatially explicit analysis and concern real places, communities, and landscapes

Perspectives: Social and ecological integration







Urban Heat and Human Health and Well-being

Heat stress already has major health impacts in many cities and the incidence of heat stress is expected to rise with global climate change

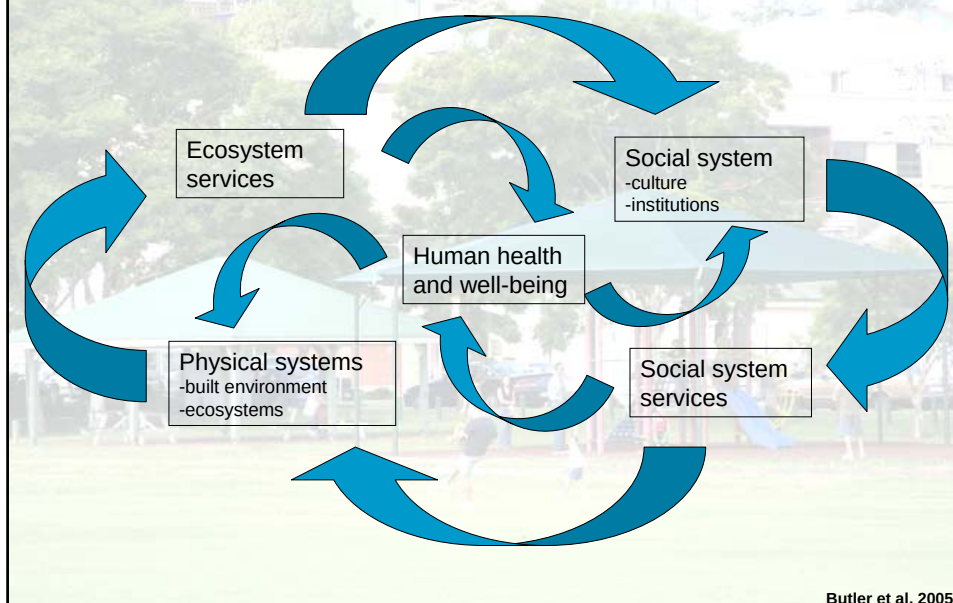
We are interested in heat stress in Australian cities and the degree that it is linked to

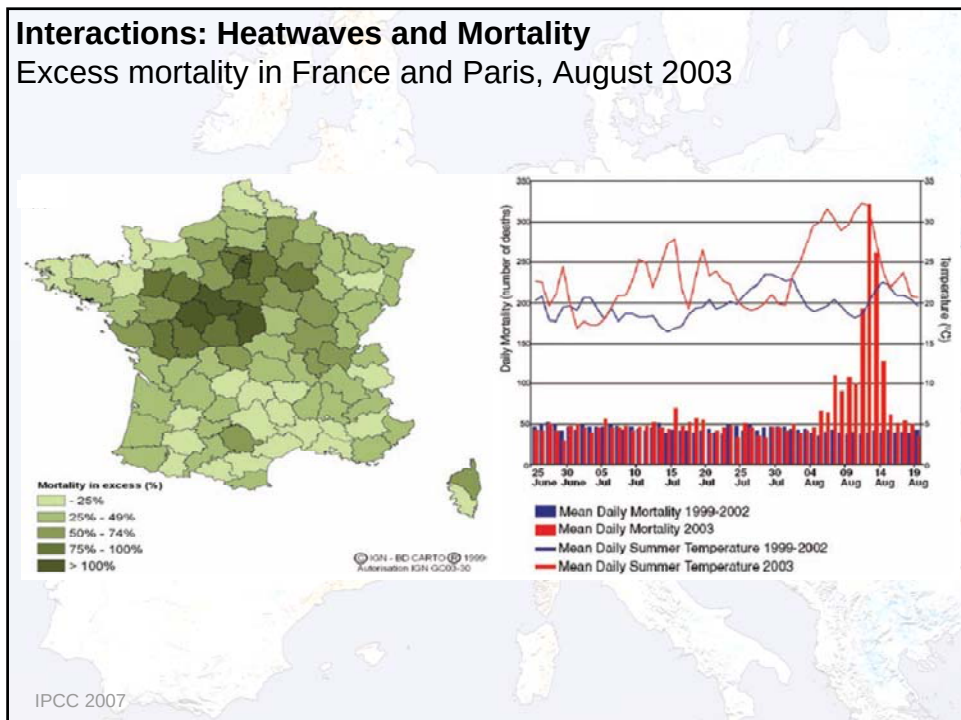
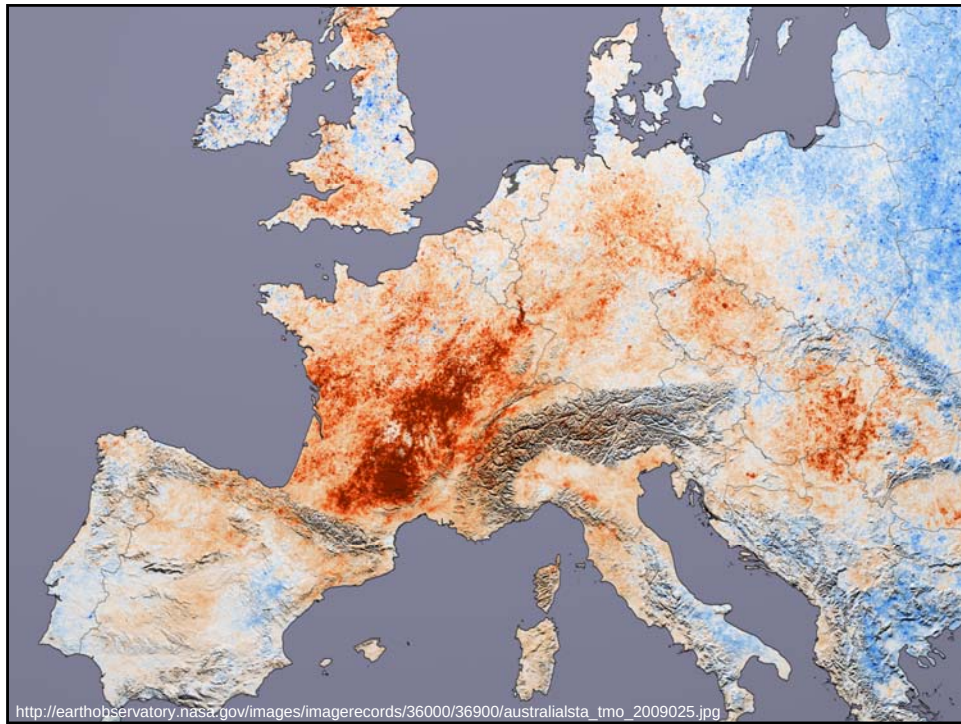
- the built environment / land cover,
- weather and climate, and
- social / behavioural factors



What are the intervention / adaptation strategies available to us?

Environmental and social determinants of human health and wellbeing

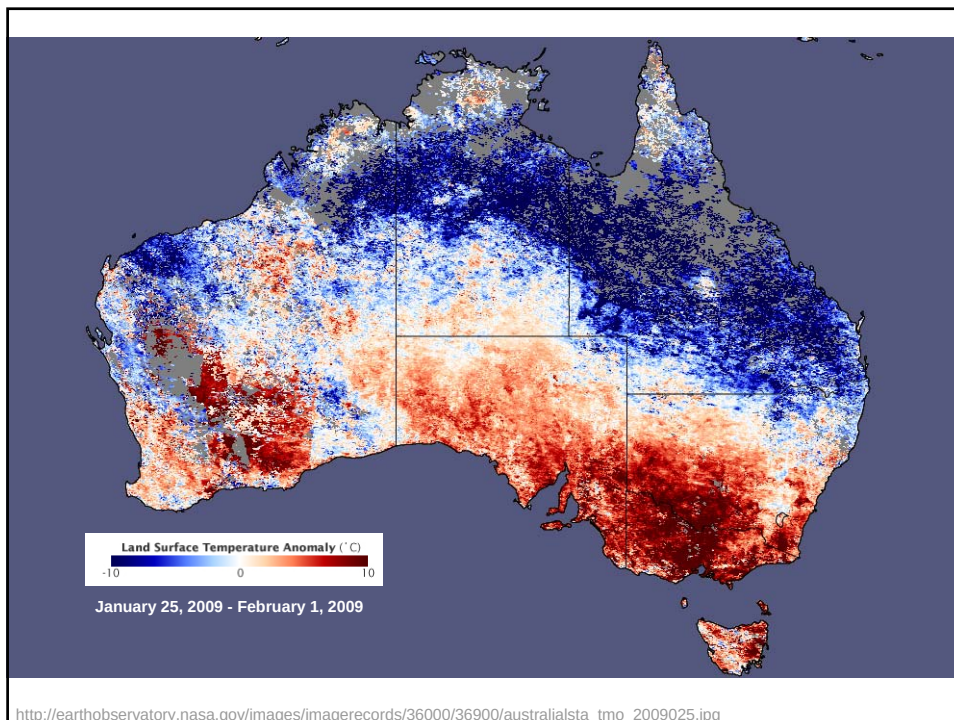






City announcement in Paris after the 2003 European heat wave.

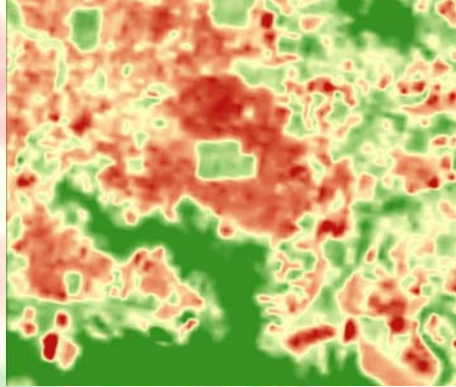
The message gave a free phone number for people who needs to find if a member of their family died of heat.



The Built Environment / Land Cover



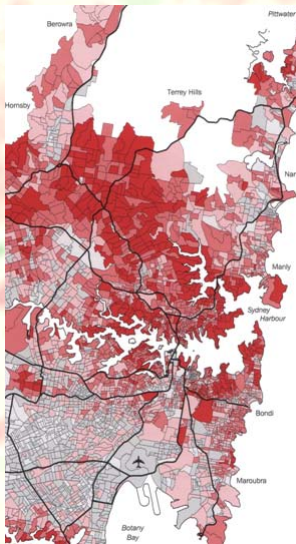
ASTER false-colour image



ASTER thermal image

Example from Baltimore, MD 2004

Social / Behavioural Factors



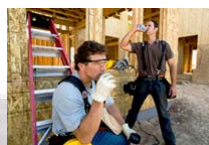
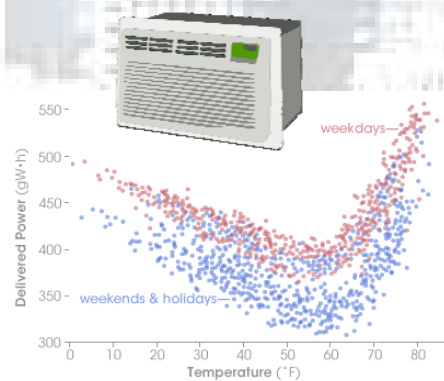
Adaptation Options

Public health responses



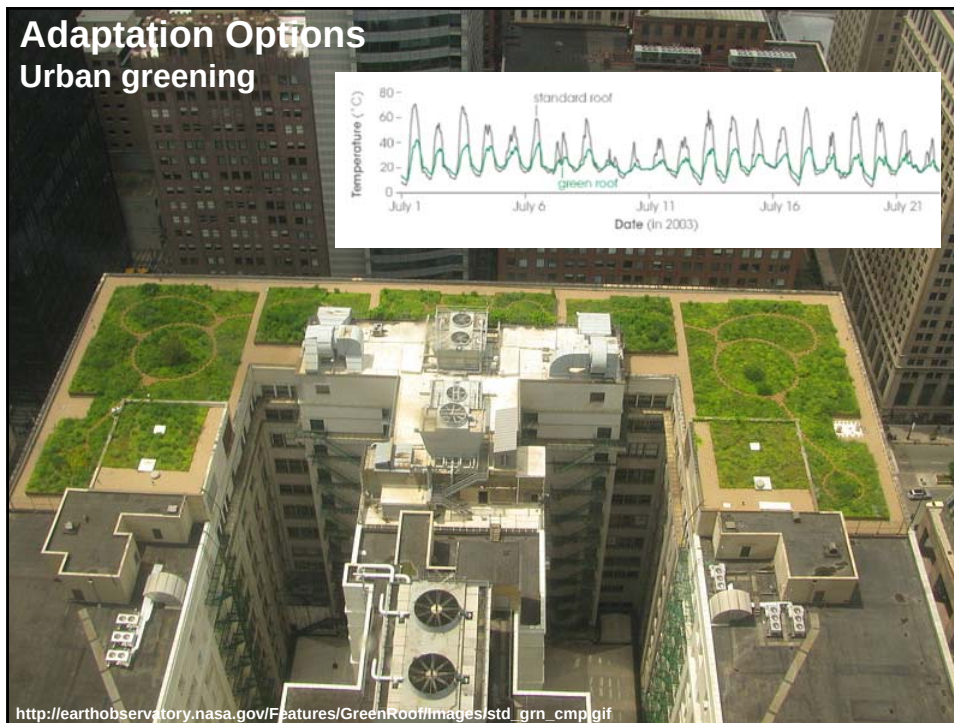
Adaptation Options

Behavioural responses



http://earthobservatory.nasa.gov/Features/GreenRoof/Images/energy_demand_temp_rt.gif

Adaptation Options Urban greening



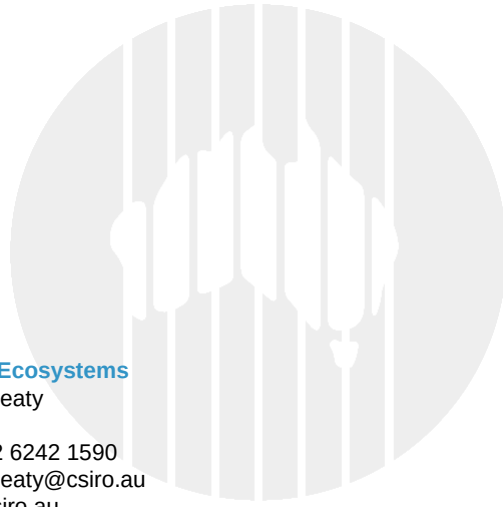
Opportunities

Linking theory and practice

- Basic and applied research
- Stakeholder engagement
- Communities of practice

Identifying intervention strategies

- Multilevel responses
 - Retrofitting
 - Urban greening
 - Behavioural / social
- Adaptive management



Sustainable Ecosystems

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